

WHAT IS CLAIMED IS:

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1. A method for cross-fading audio streams, said method comprising the steps of:

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receiving first audio data from a first audio stream;

receiving second audio data from a second audio stream,

normalizing in sampling rate a portion of said first audio data which overlaps in time with said second audio data to generate first samples;

normalizing in sampling rate a portion of said second audio data which overlaps in time with said first audio data to generate second samples; and

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cross-fading pairs of samples, each pair substantially corresponding to a playback time, one sample of each pair from said first samples, the other sample of each pair from said second samples.

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2. The method as defined in Claim 1, wherein said cross-fading includes applying a first cross-fade weight to a first sample of each of said pair of samples to obtain a first contribution, applying a second cross-fade weight to a second sample of each of said pair of samples to obtain a second contribution, and combining said first and second contributions to generate a cross-fade sample.

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3. A method for cross-fading between first and second received audio streams representing the same original audio signal, the method comprising the steps of:

receiving in a receive buffer first audio data representing a time period t_1 of said original audio signal, said first audio data from said first audio stream;

decoding said first audio data to generate first audio samples;

resampling said first audio samples in accordance with a target sampling rate to generate first resampled audio samples;

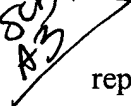
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receiving in said receive buffer second audio data representing a time period t_2 of said original audio signal, said second audio data from said second audio stream, said time period t_2 overlapping in a time period t_3 said time period t_1 ;

decoding said second audio data to generate second audio samples;

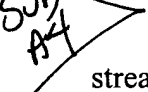
resampling said second audio samples in accordance with said target sampling rate to generate second resampled audio samples, each of said second resampled audio samples substantially corresponding in time to a respective one of said first resampled audio samples to form a sample pair; and

5 cross-fading each sample pair corresponding to a time within said time period t_3 , by applying a first cross-fade weight to a first sample of said sample pair to obtain a first contribution, by applying a second cross-fade weight to a second sample of said sample pair to obtain a second contribution, and by combining said first and second contributions.

10  4. The method as described in Claim 3, wherein said first audio stream represents said original audio signal at a first sampling rate and said second audio stream represents said original audio signal at a second sampling rate.

15 5. The method as described in Claim 4, wherein each applied first cross-fade weight represents a value between 1 and 0, and the sum of said first cross-fade weight and said second cross-fade weight applied to each said sample pair is 1.

6. The method as described in Claim 5, wherein each applied first cross-fade weight represents a point along a curve defined by one-half cycle of the cosine function offset and scaled to begin at a value of one and end at a value of zero.

20  7. A system for cross-fading between first and second received audio streams representing an original audio signal, said system comprising:

a receive buffer storing received audio stream data;
a decoder decoding audio stream data from said receive buffer into digital samples;

25 a sample-rate converter resampling said digital samples in accordance with a target sampling rate; and

a cross-fader responsive to a cross-fade signal to cross-fade first resampled digital samples from said first audio stream with resampled digital samples from said second audio stream overlapping in time with said first digital samples.

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8. The system as described in Claim 7, wherein said cross-fader applies cross-fade weights to paired resampled samples from said first and second audio streams to generate cross-faded samples, each of said pairs of resampled samples substantially corresponding to a playback time.

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9. The system as described in Claim 8, wherein said cross-fader applies a first cross-fade weight to a first of each pair of said resampled samples and applies a second cross-fade weight to a second of each pair of said resampled samples, said first and second cross-fade weights summing to one.

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10. A system for cross-fading audio data, the system comprising:
means for receiving transmitted audio data;
means for decoding audio data from two different audio streams;
means for resampling audio data from two different audio streams to a common sampling rate, the audio streams encoded at different sampling rates;
and
means for cross-fading resampled audio data from first and second portions two different audio streams, said audio data overlapping in time, said two different audio streams representing the same original audio signal.

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